

What It Takes to Teach in a Fully Online Learning Environment: Provisional Views from a Developing Country

Jessie S. Barrot, Ph.D.
National University, Philippines

Joan Y. Agdeppa
University of Manitoba, Winnipeg, Canada

Brendalyn A. Manzano, Ph.D.
College of Arts and Social Sciences, Tarlac State University, Philippines

Abstract

The present study was undertaken to obtain a clearer picture of teachers' online instructional delivery and identify difficulties that might require intervention. Specifically, the following research questions are addressed: (1) What are teachers' practices to promote learning in a fully online learning space? (2) What challenges do teachers experience during the fully online learning sessions? This study involved interviews with 17 teachers from nine higher education institutions in the Philippines, a developing country. Using a descriptive case approach, results indicated that teachers promoted flexibility and interaction, facilitated learning processes, and fostered an affective learning climate as much as they could. While most teachers practice flexibility, the data also showed some rigidity in their practices. Findings also suggested the critical role of technology in facilitating learning processes and stimulating class interactions. However, these teachers faced several challenges related to technological sufficiency, learner-related factors, teaching delivery and assessment, technological complexity, and self-regulation, among others. Their varying experiences were linked to unique contexts brought about by several factors, namely available tools, institutional policies, pedagogical goals, and learner-related factors. Implications for classroom practices, policy making, teacher training, and future research are discussed.

Keywords: Online learning, higher education, education technology, teaching practices, teacher agency

Barrot, J., Agdeppa, J. & Manzano, B. (2024). What it takes to teach in a fully online learning environment: Provisional views from a developing country. *Online Learning*, 28(1), 129-150. DOI: <https://doi.org/10.24059/olj.v28i1.3921>

Teachers and their teaching approaches play a critical role in the success of the online and blended learning. Prior to the COVID-19 pandemic, research suggested that teachers in the online and blended space encountered a variety of teaching challenges, including dealing with unfamiliar technology, incorporating flexibility, stimulating interaction, facilitating students' learning processes, and fostering an affective learning climate (Boelens et al., 2017; Rasheed et al., 2020). Much of this research focused on colleges and universities in the U.S. or other high-resource countries with robust technological and educational infrastructures. Unlike highly developed areas, low-resource contexts confront unique concerns about availability of learning materials, internet connectivity, content development, and learning technologies (Andersson, 2008; Barteit et al., 2020). Such is the case in the Philippines where poor internet connectivity and a lack of technological resources prevent some teachers from implementing synchronous online learning activities and providing real-time feedback (Barrot & Fernando, 2023). Another major stumbling block to successful online learning and teaching in low-resource contexts is acquiring, maintaining, and sustaining technological resources. These challenges lead to poorly equipped traditional or virtual classrooms (Aung & Khaing, 2015).

Recently, educational systems across the globe faced a health crisis which forced them to shift to online learning across the full spectrum of educational levels. In the case of the Philippines, all higher education institutions shifted to emergency remote teaching during the pandemic. Such a transition demands recalibrated policies, protocols, and curricula, upskilling of technical staff, and acquisition of new systems and infrastructures (Donitsa-Schmidt & Ramot, 2020). This circumstance is unique as the pandemic could aggravate the challenges that teachers experienced during online learning due to restrictions in mobility and health protocols (Kapasias et al., 2020). Given today's uncertainties, it is vital to gain a nuanced understanding of teaching practices in an online learning environment.

Situated within the context of a developing country, the current study explores college teachers' experiences navigating fully online learning space across various subject areas. In addition, this study examines how their experiences varied and what factors may explain these differences. Specifically, the following research questions are addressed: (1) What are teachers' practices to promote learning in a fully online learning space? (2) What challenges do teachers experience during the fully online learning sessions?

Literature Review

Factors That Shape Online Learning

The success of an online learning environment has been attributed to several factors at three levels within higher education: institutional (orientation, infrastructure, policies, and protocols), instructor (content knowledge, pedagogical skills, and technical skills), and student (behaviour, psychosocial state, proficiency, aptitude, and motivation) (Barrot et al., 2021; Muljana & Luo, 2019). Institutional factors are considered essential factors in the success of online learning. As several studies have shown, student support and orientation (Aversa & MacCall, 2013), technological support (Parkes et al., 2015), and resource sharing (Shaw et al., 2016) affected students' online learning experience. The influence of institutional factors became evident when educational institutions across the globe were compelled to migrate to fully online learning because of the threats of COVID-19. Schools adopted learning technologies and

infrastructures, trained teachers and staff for a shift to online learning, and established emergency teaching protocols (Donitsa-Schmidt & Ramot, 2020).

At the student level, several student-related factors have been reported to shape online learning. These include behavioural characteristics, demographic variables, and other personal variables (Muljana & Luo, 2019). Some studies have shown that self-efficacy, self-determination, time management, and metacognition contributed to sustaining student retention and academic achievement (Gomez, 2013; Lee et al., 2013). In the same way, age, academic standing, and gender may also influence student performance in an online learning space. For instance, Xu and Jaggars (2013) found that males, younger students, and students with lower academic performance struggled more than others in adapting to online courses. Cochran et al. (2014) echoed the same findings within the context of predicting retention in online courses. However, they found that males were more likely to withdraw than females only in certain cases.

Finally at the instructor level, this alternative learning space provides valuable opportunities for efficient teaching and learning and offers teachers a variety of technologies to expand their teaching repertoire, such as online-based assessment and interactive learning activities (Barrot & Acomular, 2022; Price & Kirkwood, 2014). Online learning technologies may enable teachers to be more self-reflective about their current practices, improve their digital competencies, and better understand 21st century learners or digital natives (Barrot & Acomular, 2022; Turugare & Rudhumbu, 2020). Singh and Thurman (2019) also reported four pedagogical functions that teachers perform within an online learning environment: creating the learning process, concretizing students' ideas, supporting students in developing their conceptual understanding, and structuring and summarizing students' understanding of certain concepts. Moreover, Moorhouse and Wong (2021) found that teachers' pedagogical and technological development passed through three phases in an online teaching environment: the reactive phase (teachers not recognising the need to engage in active online teaching), the experimentation phase (teachers proactively exploring online teaching approaches), and the stabilisation phase (teachers experimenting with different approaches and technologies and engaging in professional development activities). However, one issue that teachers confront is how to make the most of the available online platforms and tools due to technological insufficiency and complexity, which demand a different set of skills (Rasheed et al., 2020). Developing the necessary skills to navigate an online learning space is critical to help manage the pedagogical and cognitive burden faced by teachers during online instructional delivery (Borup & Evmenova, 2018; Comas-Quinn, 2011). As highlighted by Brinkley-Etz Korn (2018), teachers need to be well trained in navigating technologies and integrating their acquired skills into their pedagogical system. Despite efforts to help teachers navigate technology effectively, its integration remains to be a challenge because of a one-size-fits-all approach to staff development (Comas-Quinn, 2011; Turugare & Rudhumbu, 2020).

Teaching Challenges in a Fully Online Learning Context

Although several studies have been undertaken regarding teaching challenges within a blended learning environment (e.g., Boelens et al., 2017; Martin et al., 2020; Rasheed et al., 2020), less attention has been paid to the challenges college teachers experience in a fully online learning context. One such study was by Comas-Quinn (2011), who investigated the impact of online teaching on teachers in a university in the U.S. The mixed-methods study found that

teachers' poor understanding of the tools and their pedagogical affordances, as well as the magnitude of adjustment that teachers needed to make in a short span of time, contributed to their challenges and negative attitude towards the online teaching environment. Teachers also reported that online social interaction and communication had less value than face-to-face interaction in terms of language learning. Finally, teachers did not gain sufficient opportunities to deepen their understanding of the tools and their pedagogical affordances despite the several trainings conducted. Similarly, Sword (2012) identified key challenges that nursing teachers in the U.S. experienced as they transitioned to online teaching. These include doubling workload, inefficacy of traditional teaching strategies, loss of personal connection with students, lack of resources, and adaptability issues. To address these concerns, the study recommended some possible solutions, such as teacher training, faculty involvement in policy making, orientation, and workload reduction. Similarly, Wingo et al. (2016) examined the benefits and challenges of teaching online using a multiple case study approach at three U.S. schools of nursing. They found that the challenges that teachers experienced during online teaching revolved around appropriate teaching strategies, instructors' availability, training and support, and institutional challenges. Additionally, they found some gaps in the perspectives among the teachers, which suggest communication issues. A parallel study was undertaken by Gil-Jaurena and Domínguez (2018) to determine the changes and challenges that teachers faced within a digital and open online environment at a university in Spain. Their findings indicated that teachers view this learning environment as innovative in terms of peer assessment, gamification, video lecturing, and peer support. However, they also reported that it reduced teacher presence and interaction with learners and hindered personalised attention to each learner. To expand the coverage of previous studies, Sithole et al. (2019) surveyed 17 teachers from five U.S. universities about the challenges they faced during fully online teaching delivery. Four key challenges emerged from this survey study: large class size in online courses, academic dishonesty (e.g., plagiarism, exam leakage, and cheating during exams), technical problems, and lack of connection with students.

More recently, studies on online teaching challenges have emerged as COVID-19 forced educational institutions to shift to fully online learning delivery. Among these is Varea and González-Calvo (2021), who examined the practices of 12 pre-service physical education (PE) teachers in Spain who were forced to shift to online instructional mode. Using multimodal data from interviews and participant-produced drawings, results indicated that PE teachers felt that PE courses lost their identity due to lack of physical contact with students and inability to employ cooperative and group activities. At a personal level, teachers reported some feelings of sadness, uncertainty, and lack of freedom because of the pandemic. Beyond PE courses, González et al. (2023) interviewed 151 teachers across eight Chilean colleges and universities about their experiences of online teaching during the pandemic. Using a qualitative hybrid thematic analysis approach, the study revealed that teachers who perceived themselves as having poor digital skills faced greater online teaching challenges. Teachers also reported a variety of internet connectivity problems and low student engagement, and they employed various strategies to overcome them, such as an empathic disposition, upgrading their digital skills, innovating course designs, and expanding their digital technologies.

While there have been studies exploring teachers' challenges in an online learning space, there is a dearth of research examining this phenomenon within the context of developing countries, such as the Philippines. One such study was that of Zamani et al. (2016) who mainly

focused on the challenges but did not explore teaching practices. Noor et al. (2020) carried out a parallel study that focused on both the practices and challenges. Although these two studies contributed to the body of knowledge concerning the online teaching experiences of teachers in developing countries, their scope was limited as they mainly centred on the individual and microsystem levels, excluding other important dimensions beyond the classroom environment. Thus, this study fills a significant gap in the literature.

Conceptual Framework

In this study, our analysis of teachers' practices and challenges during fully online teaching was informed by a systematic literature review of the key challenges that teachers experience in a virtual learning environment, with a primary focus on teachers in higher education (Boelens et al., 2017). While the Boelens et al. (2017) review focused on studies of blended learning rather than fully online learning, the Boelens framework was adopted because it goes beyond the individual and microsystem (e.g., classroom) levels and accommodates other important dimensions, such as the mesosystems (e.g., institutional factors) and exosystem (e.g., internet service at the national level).

Boelens and colleagues identified four categories of challenges in terms of facilitating learning in the online context: incorporating flexibility, stimulating interaction, facilitating students' learning processes, and fostering an affective learning climate. Incorporating flexibility suggests that students are given control over their own learning in terms of time (synchronous or asynchronous), place (remote or residential), path (order of providing course content), and pace (students' speed in processing the course materials) (Horn & Staker, 2014). Stimulating interaction relates to allowing the students to communicate with the teacher and peers through questioning, collaboration, feedback, and learning activities. According to Boelens et al. (2017), interaction is lower when transactional distance is high. Transactional distance refers to a "psychological and communications space to be crossed, a space of potential misunderstanding between the inputs of instructor and those of the learner" (Moore, 1993, p. 22). The third category—facilitating students' learning processes—involves the use of instructional activities to help students regulate their own learning. These self-regulation strategies include orienting and planning, monitoring, adjusting, and evaluating (Vermunt & Verloop, 1999). The final category, fostering an affective learning climate, relates to the instructional activities that make students feel motivated, safe, accepted, valued, and positive towards the teacher and the course (Mazer et al., 2007). Vermunt and Verloop (1999) identified five categories of affective strategies, namely, motivating, concentrating and exerting effort, appraising, dealing with emotions, and attributing and judging oneself.

Boelens' framework focuses closely on teaching and learning processes within the virtual classroom and does not necessarily address other related challenges teachers may face as they attempt to implement these processes. Accordingly, we remained attentive to other challenges (e.g., internet connectivity issues) which could interact with, or accentuate the challenges of, effective facilitation of learning.

Material and Methods

The present study adopted a descriptive case study approach, which provides a description of an existing phenomenon in a real-world context experienced by a group of people (Smith & Strahan, 2004). It involves the description of a behaviour without any intention to manipulate it or the environment in any way (Nevin et al., 2008). Hence, this approach allowed the researchers to collect complex data about teachers' experience in an online environment and to clearly understand the phenomena from an emic perspective.

Context and Participants

The participants of this study were 17 teachers from nine universities in the Philippines. They were recruited using direct person-to-person contact with prospective participants. Invitations for participation were sent to 20 teachers in the third quarter of 2021. However, only 17 accepted the invitation. The participants were selected through purposive sampling using the following eligibility criteria: (1) teaching in higher education, (2) with at least three years of teaching experience, (3) familiar with the use of technologies in the classrooms, and (4) have been teaching online for at least one year. Of the 17, nine are males, and eight are females; they have been teaching for 3 to 20 years ($M = 9.09$; $SD = 4.90$), handling courses in the field of arts and humanities ($N = 7$), social sciences ($N = 3$), business ($N = 2$), psychology ($N = 2$), math and engineering ($N = 2$), and education ($N = 1$). Most of the participants obtained a master's degree ($N = 10$), while a few completed their doctorate ($N = 3$), bachelor's degree ($N = 2$), post-graduate certificate ($N = 1$), or law degree ($N = 1$). All teachers conducted online classes using a combination of synchronous and asynchronous modes. All participants were informed about the purpose of the research and voluntarily consented to participate. Moreover, this study followed institutional research ethics protocol and ensured the anonymity of participants and confidentiality of information. Table 1 shows the profile of the participants.

Table 1
Summary of Teachers' Profile

Participants	Gender	Years of Teaching	Highest Educational Qualifications	Fields
T1	Female	13	Master's Degree	Arts and Humanities
T2	Male	10	Master's Degree	Social Sciences
T3	Female	20	Master's Degree	Arts and Humanities
T4	Female	7	Bachelor's Degree	Arts and Humanities
T5	Female	10	Master's Degree	Arts and Humanities
T6	Male	11	Master's Degree	Arts and Humanities
T7	Female	7	Post-graduate	Arts and Humanities
T8	Male	3	Bachelor's Degree	Business
T9	Female	4.5	Doctoral Degree	Psychology
T10	Male	10	Master's Degree	Math and Engineering
T11	Male	7	Doctoral Degree	Psychology
T12	Male	17	Doctoral Degree	Education
T13	Male	3	Master's Degree	Business
T14	Female	5	Master's Degree	Math and Engineering
T15	Male	3	Master's Degree	Social Sciences
T16	Male	13	Law Graduate	Social Sciences
T17	Female	11	Master's Degree	Arts and Humanities

Instrument and Data Collection

The data were collected using semi-structured interviews, which is an approach to gathering information from participants with personal experience, beliefs, and attitudes to the phenomenon under investigation (DeJonckheere & Vaughn, 2019). The interview protocol centred on two areas: participants' background information and the main questions. The *background information section* asked about the teachers' name, affiliation, gender, age, designation, years of teaching experience, courses being taught, highest educational qualification, and online learning mode used in class. The items in the *main questions section* are clustered into four subsections (Boelens et al., 2017): (a) promoting flexibility, which asked about the time, place, path, and pace of learning; (b) stimulating interaction, which asked about the verbal or non-verbal, spoken or written, and synchronous or asynchronous strategies that teachers employed; (c) facilitating learning processes, which asked about orienting/planning, monitoring, adjusting, and evaluating strategies; and (d) fostering affective learning climate, which asked about how teachers used affective strategies, promote positive attitude towards online learning, and encourage students. Each subsection asked how teachers facilitated their online class and the challenges they experienced. The interview protocol was validated by two experts with post-graduate degrees, multiple publications in reputable journals, and at least ten years of teaching experience in higher education.

All interviews were conducted online via Facebook messenger by the second author and lasted for about two hours. Synchronous online interviews were used because of the ongoing community quarantine and the proximity of the interviewer with the participants. The interviewer ensured that participants were comfortable and open to talk freely during the interview to avoid social desirability biases (Bergen & Labonté, 2020); for example, participants were informed that there were no wrong responses and that their identity and responses would be handled with the utmost confidentiality. With the permission of the participants, all interviews were recorded to ensure that all relevant information was captured accurately for transcription and analysis.

Data Analysis

The transcribed interviews were analysed using predetermined categories based on the conceptual framework and research questions. Specifically, we used multilevel coding in classifying the codes from the transcripts (Birks & Mills, 2011). First, we grouped responses into two general classifications: (1) Facilitating Learning, and (2) Other Challenges during an online class. We further classified the responses in each general category into the four Boelens et al. (2017) subcategories: promoting flexibility, stimulating interaction, facilitating learning processes, and fostering an affective learning climate.

To analyse responses within each of the four Facilitating Learning subcategories, we created more finely grained classifications suggested by the Boelens framework and others who have built on it (Horn & Staker, 2014; Mazer et al., 2007; Vermunt & Verloop, 1999). Then, we identified the relevant codes from the responses of each participant and categorised these codes based on the similarities or relatedness of their properties and dimensions. To analyse responses within the Other Challenges subcategories, we compared them across the four Facilitating Learning categories.

Note that we performed a constant comparative and progressive analysis of cases to allow the initially identified subcategories to emerge and take shape, while remaining open to the possibility of new categories, subcategories, or fine-grained classifications arising from the data. This means that we completed the analysis of all the responses of Teacher 1 before we proceeded to Teacher 2, and so forth. To ensure the reliability of the analysis, each of us independently analysed the 17 transcripts. Prior to analysis, we revisited the purpose, research questions, research method, and codes and coding scheme of the study. We also had a calibration session where we discussed ways on how we could consistently analyse the qualitative data. We discussed any disagreements until full agreement was achieved.

Findings

The current study investigated teachers' experience in a fully online learning space within the context of higher education. Specifically, we examined how they navigated the online learning environment to facilitate learning and the challenges they faced during fully online teaching.

Teachers' Practices to Facilitate Online Learning

Tables 2 through 5 summarize teachers' practices to facilitate learning within each of Boelens' four categories. Overall, teachers were most likely to discuss multiple practices related to fostering an effective learning climate (with $f = 79$ mentions across teachers), followed by facilitating learning ($f = 57$) and promoting flexibility ($f = 54$), while facilitating interaction was mentioned the least ($f = 25$).

Table 2 reveals that teachers extensively practised flexibility in the four key areas suggested by our conceptual framework (i.e., time, place, path, and pace of learning). Among these areas, flexibility in time was the most frequently used as teachers provided extra time to students to process the lesson (e.g., T4, T13, T15), set flexible deadlines for students' outputs (e.g., T5, T8), and employed both synchronous and asynchronous sessions (e.g., T3, T5). Teachers also showed some flexibility in the place of learning. For instance, T4 commented that "they can stay wherever they can to focus on our class regardless if it's in home, office etc." T5 echoed the same flexibility as she allowed her students to choose the learning space depending on their own context. In the case of order in which the content is provided in the course (path), teachers either adjusted the syllabus content or the course requirements. Take, for example, T9 and T14, who rearranged their course content to fit better to the online setting. Conversely, fewer than half of the teachers reported that they adjusted their teaching based on how students progressed at their own pace. These teachers showed flexibility in the pace of learning by simplifying the topics (e.g., T1, T9) and taking pauses to allow other students to catch up (e.g., T8, T12). Although teachers generally practise flexibility, some teachers also counterbalance their practises with inflexibility. For instance, T7 reported that teachers in their school employed the suggested teaching strategies as they match the school requirements. Some of them (e.g., T6, T8) also strictly followed the provided course outline as they found it easy to follow and useful to keep themselves and their students on track. These findings suggest either a dichotomy or continuum in teaching flexibility, which require further investigation.

Table 2*Summary of Teachers' Responses on Their Teaching Practices in Promoting Flexibility*

Areas	<i>f</i>	Sample Responses
Flexibility in Time	17	<i>Extra time was given to the students to fully understand the concepts being taught to them. (T4)</i> <i>Flexible in deadlines and outputs (T8)</i>
Flexibility in Place	15	<i>They can stay wherever they can to focus on our class regardless if it's in home, office etc. (T4)</i> <i>Preferably home, but students may choose wherever depending on their availability. (T5)</i>
Flexibility in Path	14	<i>Modified some of my course content to fit better to our online settings (T9)</i> <i>Trying to interchange topics which needs to be discussed on synchronous classes (T14)</i>
Flexibility in Pace of Learning	8	<i>Some topics were adjusted and simplified (T1)</i> <i>Taking pauses for my students to catch up, no one is left behind. (T8)</i>

Boelens' framework suggests that practices to stimulate interaction include questioning, collaboration, feedback, and learning activities. Table 3 suggests that questioning was a popular approach among our teachers. For instance, T2 devoted "less time in discussion and more time with question and answer," while T16 employed a Socratic method, which is a cooperative dialogue between the teacher and the students through asking and answering questions. Other teachers asked students to recite during synchronous sessions to facilitate learning (e.g., T3, T9, T12). Meanwhile, four teachers engaged students in a collaborative discussion during synchronous sessions to ensure that everyone was listening (T13), expressing his/her thoughts (T6), and participating in learning activities (T7, T8). Few teachers mentioned providing feedback through one-on-one consultation (T2) and positive reinforcement (T17), while others used gamified learning (T5). In addition to the four themes suggested by Boelens, many teachers spoke to an additional theme of the technology affordances of LMS or social media to promote interaction. Among the affordances that they used are video tools and microphones (T2, T4, T7), whiteboard feature (T5), and instant messaging (T4, T6, T7).

Table 3***Summary of Teachers' Responses on Their Teaching Practices in Stimulating Interaction***

Areas	<i>f</i>	Sample Responses
Questioning	8	<i>Less time in discussion and more time with question and answer (T2)</i> <i>Following the Socratic method (T16)</i>
Using LMS or Social Media Affordances	8	<i>For synchronous classes, we maximise the tool. So, I use the white board feature in our tool. (T5)</i> <i>Use videos mics for live classes (T10)</i>
Collaboration	4	<i>Encourage my students to join in the chat discussion, my students rely on the materials I have provided for them (T7)</i> <i>Asking for the students to be collaborative and join in the discussion (T8)</i>
Feedback	3	<i>The students can contact me for consultation for some of them are shy to recite during synchronous class (T2)</i> <i>Giving additional points to the students who participate actively (T17)</i>
Gamified Activities	2	<i>Use of some applications such as roulette, word choice and I do some game shows like jeopardy, family feud, etc. (T5)</i>

As shown in Table 4, teachers substantially employed different regulatory strategies, namely orienting and planning, monitoring, adjusting, and evaluating. During orienting and planning, all teachers reported that they conducted a course orientation using the designated LMS. In this session, students were given a course outline (T4, T14, T17) and learning materials (T16), were oriented on the policies, requirements, and grading system (T2, T5), and were asked about their expectations of the course (T10). In terms of adjusting, teachers mentioned the theme frequently; for example, five teachers conducted remediation when their students failed in formative assessment (T1, T8, T9, T16) or experienced reading difficulty (T2), while others adjusted the topic and activities to the level of their students (e.g., T5, T6, T10). Note that these adjustments were based on teachers' monitoring strategies during online learning sessions. As the learning space required, teachers administered online assessment activities, such as quizzes, writing tasks, reflective essays, and oral recitation (e.g., T6, T9) as well as navigated the various features of the LMS (e.g., T1, T12, T16) to monitor students' progress and provide comprehensive, timely, and quality feedback. In other cases, teachers rigorously monitored students' attendance (e.g., T13). Finally, teachers used a variety of strategies to determine the extent to which students achieved the learning outcomes. These summative tests or culminating activities included interactive examinations (T3), research papers (T2, T5), collaborative video development (T2), portfolio assessment (T6), objective test type (T10), and post-tests (T11).

Table 4

Summary of Teachers' Responses on Their Teaching Practices in Facilitating Learning Processes

Areas	<i>f</i>	Sample Responses
Adjusting	16	<i>Open for repeating the lesson when students find it difficult to understand and if most students fail on exam or quiz. (T1)</i> <i>Do some revisions on the course outline for them to understand it more and explaining a bit more (T10)</i>
Monitoring	15	<i>We use our learning platform for monitoring. The feature of the platform can easily manage to score, show the feedback, etc. (T1)</i> <i>Online activity and quizzes, giving some timely feedback (T6)</i>
Orienting and Planning	14	<i>I conduct orientation and overview for the course and lessons, providing initial requirements (T2)</i> <i>Giving ideas and background regarding the course subject, overview of the whole topics (T15)</i>
Evaluating	12	<i>Group papers, group videos, admission and final paper were asked to be written and submitted by the students (T2)</i> <i>Summative tests were given as well as compilation of previous activities. (T6)</i>

With reference to fostering an affective learning climate (Table 5), the most frequently used strategy relates to dealing with students' emotions ($N = 42$). To do this, teachers made themselves available to their students beyond the scheduled class time and practised open communication. As T15 shared, he made sure that he had "open communication with the students with *Kamustahan* Session". *Kamustahan* session is an informal talk between the teacher and the students for the sole purpose of knowing what is going on with the students' lives. Other teachers (e.g., T6, T10, T13) echoed the positive impact of establishing open communication on fostering an affective learning climate. Another strategy that teachers employed to deal with students' emotions is by showing empathy and consideration to students. T1 noted that she always tried "to be considerate and listen to their case and reasons." A similar feeling of empathy was expressed by T8, T14, T15, and T17. Other strategies that teachers used when dealing with students' emotions are appreciating students' effort and work (T1), encouraging optimism (T2), engaging students in reflective activities (T5), discussing mental health (T9), and using humour (T3, T5, T8, T12, T16) and background music (T11). Another key area that promotes affective climate is motivating students, that is, maintaining a willingness to learn and forming expectations about the course and its learning outcomes. To do this, teachers provided positive feedback and reinforcement (T4, T16), used motivational words (T8, T12), adopted personalised teaching (T1, T5), clarified the learning outcomes (T3), and encouraged peer learning (T6). On

the aspect of concentrating and exerting effort, half of the responses dealt with setting deadlines. The other half employed a Socratic method (T16), reviewed the previous session, and explicitly reminded the students to focus on learning (T6), and oriented students about the learning tasks (T12). In the case of attributing and judging oneself, all eight teachers converged to the idea that self-assessment helped students attribute learning outcomes to causal factors and develop a sense of self-awareness. Finally, five teachers incorporated appraising into their teaching by explaining to the students the relevance of the learning tasks. For instance, T4 reminded her students of the importance of completing the assigned task. Meanwhile, T11 required his students to write a reflection paper for them to realise the value of the learning activities.

Table 5

Summary of Teachers' Responses on Their Teaching Practices in Fostering Affective Learning Climate

Areas	<i>f</i>	Sample Responses
Dealing with Emotions	42	<i>I make sure that whenever they message, I am giving them words of empathy, words of acknowledgement. (T5)</i> <i>Creating a culture of environment where my students are free to ask and communicate with me and joke with me but still respect and discipline should be observed (T13)</i>
Motivating	14	<i>I give them positive feedback and then, I make sure that whenever I give them negative feedback it's for them. (T4)</i> <i>Giving inspirations and a little pressure by saying "you are the next generation of educational teaching" (T12)</i>
Concentrating and Exerting Effort	9	<i>I always set a deadline in a particular task to oblige all my students to submit the activity and encourage them to participate actively in group activities. (T1)</i> <i>Giving house rules has been effective for my class (T10)</i>
Attributing and Judging Oneself	8	<i>Self-assessments were done and sometimes I gave them the privilege to judge their works. (T7)</i> <i>Assessing themselves based on the rubrics given to them from the start (T10)</i>
Appraising	6	<i>I just remind them the importance of practice in doing the task they have to do. (T4)</i> <i>Asking them to write reflection papers based on their performance (T11)</i>

Teachers' Challenges in a Fully Online Learning Space

The findings confirm the serious challenges experienced in a low-resource contexts. Among these are poor internet service, technical problems, and restricted online learning activities. Nearly all teachers raised concerns about frequent internet interruptions due to poor signal. T17 narrated that poor internet connection resulted “less enthusiasm in participating in the class” and module preparation among students. Table 6 provides the Other Challenges teachers identified, comparing them across each of Boelens’ four categories. As shown in the table, most teachers mentioned challenges in terms of the availability or quality of internet connections ($N = 14$). Take, for example, T9, T11, T14, and T16, who complained about the unstable internet connection. Both learner-related and teaching delivery and assessment challenges cut across four areas; the former is the most frequent when fostering an affective learning climate, while the latter is the most frequent when facilitating learning processes. Regarding learner-related challenges, T3 and T8 expressed concerns about the students’ frequent but unclear email messages. Meanwhile, T12, T17, and T18 had difficulties in dealing with students’ unresponsiveness. In the case of teaching delivery and assessment, teachers faced challenges when checking online activities (T3, T9, T13, T20), communicating with students (T7, T18), and giving feedback (T9). Others reported some challenges because of limited time and excessive workload (T8, T9, T10). Another major challenge that teachers needed to overcome was technological complexity, which refers to the teacher’s exposure to complex and oversupplied technologies for online teaching. This challenge was most common when promoting flexibility. T5 noted that she had problems in making her instructional delivery flexible because of too many technicalities in the entire process. This is a sentiment shared by T1, T8, and T13. Meanwhile, five teachers acknowledged that the challenges they experienced were caused by their inability to manage or control their emotions, actions, and thoughts to achieve their teaching goals. For instance, T16 and T17 said that they had difficulties in adjusting to the sudden shift to online learning platforms. Very few comments were related to the teaching environment, learning materials, physical condition and health, and technological literacy and competency. In the case of teachers’ challenges related to school policy, those who felt that their institutional policies were limited tended to be laxer and more flexible regarding deadlines and course requirements, as in the case of T3 and T6. Nonetheless, those involved in the crafting of the online learning policies claimed they somehow developed their sense of ownership and trust in the efficacy of these policies. This indicates that the more teachers trusted the institutional guidelines, the more they were committed to sticking to them.

Table 6
Teachers' Challenges During Fully Online Learning

Challenges	Promoting Flexibility	Stimulating Interaction	Facilitating Learning Processes	Fostering Affective Learning Climate	Total
Internet Connection	4	6	2	2	14
Learner-related	3	4	1	5	13
Teaching Delivery and Assessment	1	2	5	4	12
Technological Complexity	4	2	1	1	8
Self-regulation	3	0	1	2	6
Teaching Environment	1	2	0	1	4
Course Materials	1	0	2	1	4
Access to Technological Tools	1	3	0	0	4
School Policy	2	0	0	0	2
Physical Condition and Health	0	1	0	0	1
Technological Literacy and Competency	0	0	1	0	1

Discussion

The current study explores how teachers navigated the fully online learning environment and the challenges they experienced in this learning space. Overall data show that teachers extensively promoted flexibility, facilitated learning processes, and fostered an affective climate during fully online learning. Although teachers stimulated student interaction during the online learning space, it was not as extensive as the three other areas. To advance this line of research, this study provided relevant information on the specific factors that shaped these four key challenges and how the interaction among these factors contributed to the varying challenges, practices, and strategies of teachers in a fully online learning space. As shown in the above data, the teachers' navigation strategies and challenges vary from one area to another (i.e., promoting flexibility, facilitating learning processes, fostering affective learning climate, and stimulating interaction) and one teacher to another, depending on their teaching-learning contexts. The findings also highlight the key challenges in a low-resource context when engaged in fully online learning environment (see Barrot & Acomular, 2022; Andersson, 2008; Aung & Khaing, 2015; Barteit et al., 2020; Sithole et al., 2019).

The current findings reinforce earlier studies (e.g., Comas-Quinn, 2011; Johnson et al., 2020) that a lack of understanding of the tools and their pedagogical affordances as well as the adjustment needed in a short span of time contributed to teachers' challenges. This study also echoes earlier studies suggesting that in the online setting, teachers had reduced presence (Gil-Jaurena & Domínguez, 2018; Varea & González-Calvo, 2021) and interaction with students (Gil-Jaurena & Domínguez; Sithole et al., 2019), and restricted the use of collaborative activities (Varea & González-Calvo, 2021). Notably, this study concurs with the findings of González et

al. (2023), Johnson et al. (2020), and Varea and González-Calvo (2021) that these challenges were highlighted when teachers needed to abruptly shift to emergency remote teaching during the pandemic. With reference to Moorhouse and Wong's (2021) three-phase framework, the findings suggest that teachers in low-resource contexts (i.e., the Philippines) remained in the experimentation phase even two years into the pandemic due to multiple persistent resource-related challenges that they needed to confront (e.g., poor internet connectivity and limited online learning equipment).

The identified challenges faced by teachers align with earlier reports on the relevance of providing pedagogical and technical support, flexibility of time and space, and institutional guidance when conducting online classes (e.g., Çakıroğlu et al., 2022). To expand the current study, researchers may further probe into the strategies that teachers employ to overcome their online teaching challenges and the different factors that shape their use of these strategies. Further, this study extends previous studies and our understanding of teachers' experience in navigating the fully online learning space by identifying their specific practices and challenges when promoting flexibility, facilitating learning processes, fostering an affective learning climate, and stimulating interaction among students.

This study resonates with earlier reports (see Al-Samarraie & Saeed, 2018; Turugare & Rudhumbu, 2020) that teachers used the various LMS affordances to facilitate learning and overcome their teaching challenges in an online learning space. They also harnessed the power of technology for a more adaptive learning experience. This information reveals the critical role of choosing appropriate pedagogical technologies based on the teachers' unique context. However, it should be noted that teachers should not only understand how to use technology but also why they are using them. Also, teachers did not consider technological literacy and competency as a challenge because of the ample trainings provided to them by their respective institutions. Such trainings were continuous and progressive to ensure that teachers could catch up with the technological demands in class. The positive impact of training on teachers' ability to teach online has been reported elsewhere (e.g., Brinkley-Etzkorn, 2018).

Similarly, teaching and learning goals had a bearing on how teachers navigated fully online learning environment. Generally, teachers selected tools that would fulfil their pedagogical goals instead of just exclusively adopting the institutional LMS. For instance, several teachers in this study either supplemented their institutional LMS or used a different platform to meet the teaching objectives and the nature of their course. These findings reiterate earlier findings on the influence of teaching goals on online pedagogical practices (e.g., Phan et al., 2021). In the same way, institutional policies have the potential to mediate the online teaching practices of teachers. These findings echo the earlier reports of Wingo et al. (2016) and Muljana and Luo (2019) on the critical role of institutional support on teachers' practices and challenges in an online learning space. As noted by Orr et al. (2009) and Pedro and Kumar (2020), institutional practices, institutional support, and effective processes are essential to the success of online teaching efforts. The final key factor that shaped the challenges and practices of teachers online are the learners themselves. Because the selected universities follow the principle of flexible learning (i.e., flexible in time, mode, and place of learning) as mandated by the government education agency, teachers' instructional delivery heavily relied on the learning context of students, such as their home environment, socioeconomic status, resources, and

cognitive levels. These findings resonate with the earlier work of Barrot et al. (2021) and Sithole et al. (2019) on the critical role of student behaviour and characteristics in the success of online learning and teaching.

Some important insights that the findings contribute to the extant literature is that teachers can be both flexible and rigid at the same time, depending on how their decisions can contribute to their teaching goals and how they align with their beliefs. This suggests that a certain level of rigidity might have a positive impact on students' online learning experience. It was also found that affordances of learning technologies had some influence on promoting teacher-student and student-student interaction during online learning. Finally, the findings show that most of the teachers' practices to foster affective learning climate relate to extrinsic factors. However, some teachers tapped on intrinsic factors to reinforce positive online learning environment.

Conclusions

This study investigated the components of teaching in a fully online learning space, particularly the way teachers navigated this alternative learning environment and the challenges they experienced. Overall data indicated that they promoted flexibility and interaction, facilitated learning processes, and fostered an affective learning climate as much as they could. However, these teachers faced several challenges related to technological sufficiency, learner-related factors, teaching delivery and assessment, technological complexity, and self-regulation, among others. Their varying experience was linked to their unique context brought about by several factors, namely available tools, institutional policies, pedagogical goals, and learner-related factors.

Our findings provide several implications. First, this study shed light on the various challenges that online teachers faced and highlighted the importance of their readiness to embark on fully online teaching, particularly within a learning context with poor internet connectivity and limited resources. Higher education institutions with similar learning contexts could use these findings to enhance efforts toward a more efficient online learning environment. This study would also provide key information to policymakers, school administrators, and teacher trainers to reflect on the viable professional development programmes that may help teachers overcome these challenges and equip them with the necessary content knowledge as well as pedagogical and technological competence (Martin et al., 2021). Finally, the findings provided us with a nuanced understanding that teachers' navigation strategies and challenges were shaped by interrelated factors. As such, addressing the issues requires a systemic approach.

As in the case of other research, our study has limitations that need to be addressed in future studies. First, the study limits the investigation to teachers' navigation strategies and the challenges they experienced. Researchers may go deeper by probing into the specific strategies that experienced and less experienced online teachers use to overcome their challenges. Although we did not see any pattern in the navigation strategies and challenges per subject area because of the limited samples, this area merits further investigation to obtain a more nuanced view of the phenomenon. Also, our study did not explore teachers' attitudes toward online learning space and how these attitudes affect their practices and experiences. Future studies may investigate whether those who view online learning as a unique learning space recalibrate their

instructional practices extensively, or whether those who view it like traditional face-to-face classroom make a strong effort to re-create such an environment in the online setting. Another limitation of this study is its exclusive focus on teachers' perspectives. To have a better picture of the data, we recommend that the perspectives of other key stakeholders be considered, such as school administrators, technical support, and students. Note that this study exclusively used a semi-structured interview, which may not fully reflect teachers' practices. Future studies may complement this instrument with actual classroom observation for triangulation purposes. Finally, this study was delimited to the higher education context with a relatively small sample size due to its qualitative nature. Future studies may consider expanding the context to K-12 teachers and using mixed methods design with a larger sample size from different geographical regions for more robust findings.

Statement of Conflicts of Interest and Ethics Approval: This submission and its authors do not have any conflict/competing interests and that the study has followed ethics protocol and obtained ethics approval.

References

- Al-Samarraie, H., & Saeed, N. (2018). A systematic review of cloud computing tools for collaborative learning: Opportunities and challenges to the blended-learning environment. *Computers & Education*, 124, 77–91. <https://doi.org/10.1016/j.compedu.2018.05.016>
- Al Shorbaji, N., Atun, R., Car, J., Majeed, A., & Wheeler, E. L. (2015). *eLearning for undergraduate health professional education: A systematic review informing a radical transformation of health workforce development*. World Health Organization. <https://whoeducationguidelines.org/sites/default/files/uploads/eLearning-healthprof-report.pdf>
- Andersson, A. (2008). Seven major challenges for e-learning in developing countries: Case study eBIT, Sri Lanka. *International Journal of Education and Development Using ICT*, 4(3), 45–62.
- Aung, T. N., & Khaing, S. S. (2015, August). Challenges of implementing e-learning in developing countries: A review. In T. Zin, J. Lin, J. S. Pan, P. Tin, & M. Yokota (Eds.), *International conference on genetic and evolutionary computing* (pp. 405–411). Springer, Cham. https://doi.org/10.1007/978-3-319-23207-2_41
- Aversa, E., & MacCall, S. (2013). Profiles in retention part 1: Design characteristics of a graduate synchronous online program. *Journal of Education for Library*, 54(2), 147–161.
- Barrot, J. S., & Acomular, D. R. (2022). How university teachers navigate social networking sites in a fully online space: Provisional views from a developing nation. *International Journal of Educational Technology in Higher Education*, 19(1), 51. <https://doi.org/10.1186/s41239-022-00357-3>

- Barrot, J. S., & Fernando, A. R. R. (2023). Unpacking engineering students' challenges and strategies in a fully online learning space: The mediating role of teachers. *Education and Information Technologies*, 28, 9803–9825. <https://doi.org/10.1007/s10639-023-11598-8>
- Barrot, J. S., Llenares, I. I., & Del Rosario, L. S. (2021). Students' online learning challenges during the pandemic and how they cope with them: The case of the Philippines. *Education and Information Technologies*, 26(6), 7321–7338. <https://doi.org/10.1007/s10639-021-10589-x>
- Barteit, S., Guzek, D., Jahn, A., Bärnighausen, T., Jorge, M. M., & Neuhann, F. (2020). Evaluation of e-learning for medical education in low-and middle-income countries: A systematic review. *Computers & Education*, 145, 103726. <https://doi.org/10.1016/j.compedu.2019.103726>
- Bergen, N., & Labonté, R. (2020). “Everything is perfect, and we have no problems”: Detecting and limiting social desirability bias in qualitative research. *Qualitative Health Research*, 30(5), 783–792. <https://doi.org/10.1177/1049732319889354>
- Birks, M., & Mills, J. (2011). *Grounded theory: A practical guide*. Sage.
- Boelens, R., De Wever, B., & Voet, M. (2017). Four key challenges to the design of blended learning: A systematic literature review. *Educational Research Review*, 22, 1–18. <https://doi.org/10.1016/j.edurev.2017.06.001>
- Brinkley-Etzkorn, K. E. (2018). Learning to teach online: Measuring the influence of faculty development training on teaching effectiveness through a TPACK lens. *The Internet and Higher Education*, 38, 28–35. <https://doi.org/10.1016/j.iheduc.2018.04.004>
- Borup, J., & Evmenova, A. S. (2019). The effectiveness of professional development in overcoming obstacles to effective online instruction in a college of Education. *Online Learning*, 23(2), 1–20. <https://doi.org/10.24059/olj.v23i2.1468>
- Çakıroğlu, Ü., Saylan, E., Çevik, İ., Mollamehmetoğlu, M. Z., & Timuçin, E. (2022). Faculty adoption of online teaching during the COVID-19 pandemic: A lens of diffusion of innovation theory. *Australasian Journal of Educational Technology*, 38(3), 87–103. <https://doi.org/10.14742/ajet.7307>
- Cochran, J. D., Campbell, S. M., Baker, H. M., & Leeds, E. M. (2014). The role of student characteristics in predicting retention in online courses. *Research in Higher Education*, 55(1), 27–48. <https://doi.org/10.1007/s11162-013-9305-8>
- Comas-Quinn, A. (2011). Learning to teach online or learning to become an online teacher: An exploration of teachers' experiences in a blended learning course. *ReCALL*, 23(3), 218–232. <https://doi.org/10.1017/S0958344011000152>

- DeJonckheere, M., & Vaughn, L. M. (2019). Semistructured interviewing in primary care research: a balance of relationship and rigour. *Family Medicine and Community Health*, 7(2), 1–8. <https://doi.org/10.1136/fmch-2018-000057>
- Donitsa-Schmidt, S., & Ramot, R. (2020). Opportunities and challenges: Teacher education in Israel in the COVID-19 pandemic. *Journal of Education for Teaching*, 46(4), 586–595. <https://doi.org/10.1080/02607476.2020.1799708>
- Elaish, M., Shuib, L., Ghani, N., & Yadegaridehkordi, E. (2019). Mobile English language learning (MELL): A literature review. *Educational Review*, 71(2), 257–276. <https://doi.org/10.1080/00131911.2017.1382445>
- Gil-Jaurena, I., & Domínguez, D. (2018). Teachers' roles in light of massive open online courses (MOOCs): Evolution and challenges in higher distance education. *International Review of Education*, 64(2), 197–219. <https://doi.org/10.1007/s11159-018-9715-0>
- Gomez, D. (2013). Leadership behavior and its impact on student success and retention in online graduate education. *Academy of Educational Leadership Journal*, 17(2), 13–37.
- González, C., Ponce, D., & Fernández, V. (2023). Teachers' experiences of teaching online during COVID-19: Implications for postpandemic professional development. *Educational Technology Research and Development*, 71(1), 55–78. <https://doi.org/10.1007/s11423-023-10200-9>
- Horn, M. B., & Staker, H. (2014). *Blended: Using disruptive innovation to improve schools*. John Wiley & Sons.
- Johnson, N., Veletsianos, G., & Seaman, J. (2020). US faculty and administrators' experiences and approaches in the early weeks of the COVID-19 pandemic. *Online Learning*, 24(2), 6–21. <https://doi.org/10.24059/olj.v24i2.2285>
- Kapasia, N., Paul, P., Roy, A., Saha, J., Zaveri, A., Mallick, R., ... & Chouhan, P. (2020). Impact of lockdown on learning status of undergraduate and postgraduate students during COVID-19 pandemic in West Bengal, India. *Children and Youth Services Review*, 116, 105194. <https://doi.org/10.1016/j.childyouth.2020.105194>
- Lee, Y., Choi, J., & Kim, T. (2013). Discriminating factors between completers of and dropouts from online learning courses. *British Journal of Educational Technology*, 44(2), 328–337. <https://doi.org/10.1111/j.1467-8535.2012.01306.x>
- Lindqvist, M. H. (2019). School leaders' practices for innovative use of digital technologies in schools. *British Journal of Educational Technology*, 50(3), 1226–1240. <https://doi.org/10.1111/bjet.12782>

- Martin, F., Kumar, S., & She, L. (2021). Examining higher education instructor perceptions of roles and competencies in online teaching. *Online Learning*, 25(4), 267–295. <https://doi.org/10.24059/olj.v25i4.2570>
- Martin, F., Sun, T., & Westine, C. (2020). A systematic review of research on online teaching and learning from 2009 to 2018. *Computers & Education*, 159, 104009. <https://doi.org/10.1016/j.compedu.2020.104009>
- Mazer, J. P., Murphy, R. E., & Simonds, C. J. (2007). I'll see you on “Facebook”: The effects of computer-mediated teacher self-disclosure on student motivation, affective learning, and classroom climate. *Communication Education*, 56(1), 1–17. <https://doi.org/10.1080/03634520601009710>
- Moore, M. G. (1993). Theory of transactional distance. In D. Keegan (ed.), *Theoretical principles of distance education* (pp. 22–38). Routledge.
- Moorhouse, B. L., & Wong, K. M. (2021). The COVID-19 Pandemic as a catalyst for teacher pedagogical and technological innovation and development: Teachers’ perspectives. *Asia Pacific Journal of Education*. Advance online publication. <https://doi.org/10.1080/02188791.2021.1988511>
- Muljana, P. S., & Luo, T. (2019). Factors contributing to student retention in online learning and recommended strategies for improvement: A systematic literature review. *Journal of Information Technology Education: Research*, 18, 19–57. <https://doi.org/10.28945/4182>
- Nevin, A. I., Cramer, E., Voigt, J., & Salazar, L. (2008). Instructional modifications, adaptations, and accommodations of coteachers who loop: A descriptive case study. *Teacher Education and Special Education*, 31(4), 283–297. <https://doi.org/10.1177/0888406408330648>
- Noor, S., Isa, F. M., & Mazhar, F. F. (2020). Online teaching practices during the COVID-19 pandemic. *Educational Process: International Journal*, 9(3), 169–184. <https://dx.doi.org/10.22521/edupij.2020.93.4>
- Orr, R., Williams, M. R., & Pennington, K. (2009). Institutional efforts to support faculty in online teaching. *Innovative Higher Education*, 34(4), 257–268. <https://doi.org/10.1007/s10755-009-9111-6>
- Panigrahi, R., Srivastava, P. R., & Sharma, D. (2018). Online learning: Adoption, continuance, and learning outcome—A review of literature. *International Journal of Information Management*, 43, 1–14. <https://doi.org/10.1016/j.ijinfomgt.2018.05.005>
- Parkes, M., Gregory, S., Fletcher, P., Adlington, R., & Gromik, N. (2015). Bringing people together while learning apart: Creating online learning environments to support the needs of rural and remote students. *Australian and International Journal of Rural Education*, 25(1), 65–78. <https://doi.org/10.47381/aijre.v25i1.96>

- Pedro, N. S., & Kumar, S. (2020). Institutional support for online teaching in quality assurance frameworks. *Online Learning*, 24(3), 50–66.
- Phan, T., Paul, M., & Zhu, M. (2021). The role of teaching goals and instructional technology perceptions in faculty members' technology use. *Contemporary Educational Technology*, 13(3), 1–16.
- Price, L., & Kirkwood, A. (2014). Using technology for teaching and learning in higher education: A critical review of the role of evidence in informing practice. *Higher Education Research & Development*, 33(3), 549–564.
<https://doi.org/10.1080/07294360.2013.841643>
- Rasheed, R. A., Kamsin, A., & Abdullah, N. A. (2020). Challenges in the online component of blended learning: A systematic review. *Computers & Education*, 144, 103701.
<https://doi.org/10.1016/j.compedu.2019.103701>
- Rosenberg, J. M., & Koehler, M. J. (2015). Context and technological pedagogical content knowledge (TPACK): A systematic review. *Journal of Research on Technology in Education*, 47(3), 186–210. <https://doi.org/10.1080/15391523.2015.1052663>
- Shaw, M., Burrus, S., & Ferguson, K. (2016). Factors that influence student attrition in online courses. *Online Journal of Distance Learning Administration*, 19(3), 211–231.
<https://www.tiffanireardon.com/documents/2016-dl-proceedings-updated.pdf#page=211>
- Singh, V., & Thurman, A. (2019). How many ways can we define online learning? A systematic literature review of definitions of online learning (1988–2018). *American Journal of Distance Education*, 33(4), 289–306. <https://doi.org/10.1080/08923647.2019.1663082>
- Sithole, A., Mupinga, D. M., Kibirige, J. S., Manyanga, F., & Bucklein, B. K. (2019). Expectations, challenges and suggestions for faculty teaching online courses in higher education. *International Journal of Online Pedagogy and Course Design*, 9(1), 62–77.
<https://doi.org/10.4018/IJOPCD.2019010105>
- Smith, T. W., & Strahan, D. (2004). Toward a prototype of expertise in teaching: A descriptive case study. *Journal of Teacher Education*, 55(4), 357–371.
<https://doi.org/10.1177/0022487104267587>
- Sun, Y., & Gao, F. (2019). Exploring the roles of school leaders and teachers in a school-wide adoption of flipped classroom: School dynamics and institutional cultures. *British Journal of Educational Technology*, 50(3), 1241–1259.
<https://doi.org/10.1111/bjet.12769>
- Sword, T. S. (2012). The transition to online teaching as experienced by nurse educators. *Nursing Education Perspectives*, 33(4), 269–271.

- Turugare, M., & Rudhumbu, N. (2020). Integrating technology in teaching and learning in universities in Lesotho: Opportunities and challenges. *Education and Information Technologies*, 25(5), 3593–3612. <https://doi.org/10.1007/s10639-019-10093-3>
- Varea, V., & González-Calvo, G. (2021). Touchless classes and absent bodies: Teaching physical education in times of COVID-19. *Sport, Education and Society*, 26(8), 1–15. <https://doi.org/10.1080/13573322.2020.1791814>
- Vermunt, J. D., & Verloop, N. (1999). Congruence and friction between learning and teaching. *Learning and Instruction*, 9(3), 257–280. [https://doi.org/10.1016/S0959-4752\(98\)00028-0](https://doi.org/10.1016/S0959-4752(98)00028-0)
- Wingo, N. P., Peters, G. B., Ivankova, N. V., & Gurley, D. K. (2016). Benefits and challenges of teaching nursing online: Exploring perspectives of different stakeholders. *Journal of Nursing Education*, 55(8), 433–440.
- Xu, D., & Jaggars, S. (2013). *Adaptability to online learning: Differences across types of students and academic subject areas*. (CCRC Working Paper No. 4). <https://ccrc.tc.columbia.edu/media/k2/attachments/adaptability-to-online-learning.pdf>
- Zamani, B. E., Esfijani, A., & Damaneh, S. M. A. (2016). Major barriers for participating in online teaching in developing countries from Iranian faculty members' perspectives. *Australasian Journal of Educational Technology*, 32(3), 38–49.